ABSTRACT OF THE DISCLOSURE

An MIS transistor that uses a silicon carbide substrate has a buried channel structure. The surface orientation of the silicon carbide substrate is optimized so that the device does not assume a normally on state, has good hot-carrier endurance and punch-through endurance, and high channel mobility. In particular, a P-type silicon carbide semiconductor substrate is used to form a buried channel region. To achieve high mobility, the depth at which the buried channel region is formed is optimized, and the ratio between buried channel region junction depth (L_{bc}) source and drain region junction depth (X_j) is made to be within 0.2 to 1.0. The device can be formed on any surface of a hexagonal or rhombohedral or a (110) surface of a cubic system silicon carbide crystal, and provides a particularly good effect when formed on the (11-20) surface.

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